

THAT WHICH IS CLAIMED IS:

1. An apparatus for mixing liquid decontaminants and dispensing a foam-based or liquid-based decontaminant, said apparatus comprising:

a plurality of tanks capable of containing liquids;

a pump assembly in communication with said plurality of tanks , said pump assembly capable of drawing liquids from said plurality of tanks in defined ratios; and

a manifold in communication with said pump assembly and said plurality of tanks, said manifold capable of mixing liquids from said plurality of tanks.

2. An apparatus according to Claim 1, further comprising a unitary drain and fill assembly in communication with said plurality of tanks and said pump assembly;

wherein said pump assembly operates to drain and fill said plurality of tanks.

3. An apparatus according to Claim 2, wherein said drain and fill assembly comprises:

a plurality of conduits in communication with said plurality of tanks ;

a plurality of couplings in communication with said plurality of conduits, each of said plurality of couplings capable of receiving a hose; and

a plurality of valves in communication with said plurality of conduits;

wherein said drain and fill assembly drains and fills said plurality of tanks at each of said respective couplings.

4. An apparatus according to Claim 1, further comprising:

a drain assembly in communication with said plurality of tanks, said drain assembly capable of draining said tanks; and

a fill assembly in communication with said plurality of tanks, said fill assembly capable of filling said plurality of tanks.

5. An apparatus according to Claim 4, wherein said drain assembly comprises:

a plurality of conduits in communication with said plurality of tanks; and

a plurality of valves in communication with said plurality of conduits;

wherein said pump assembly operates to drain said plurality of tanks by pumping liquids from said tanks.

6. An apparatus according to Claim 4, wherein said fill assembly comprises:

a plurality of conduits in communication with said plurality of tanks;

a plurality of couplings in communication with said plurality of conduits, each of said plurality of couplings capable of receiving a hose;

a plurality of valves in communication with said plurality of conduits; and

a plurality of pumps in communication with said couplings, said conduits, and said tanks;

wherein said pumps operate to fill said plurality of tanks by pumping liquids from said couplings through said conduits and to said tanks;

wherein said drain assembly and said fill assembly drains and fills said tanks, respectively, at separate positions along said respective conduits.

7. An apparatus according to Claim 6, wherein said pump assembly and said fill assembly is capable of flushing liquid from one of said tanks through said pump assembly, said fill assembly, said conduits, and said manifold.

8. An apparatus according to Claim 1, wherein said pump assembly comprises:

a plurality of pumps in communication with said plurality of tanks, respectively, each of said pumps having a drive assembly;

wherein said plurality of pumps are capable of drawing liquids from said plurality of tanks in defined ratios through said pumps to said manifold for mixing and dispensing.

9. An apparatus according to Claim 8, wherein:

each of said pumps includes a motor for driving each of said drive assemblies, respectively;

each of said pumps is capable of operating independent of one another.

10. An apparatus according to Claim 8, wherein said pump assembly further comprises:

a plurality of couplings connecting each of said drive assemblies of said plurality of pumps; and

a motor connected to one of said drive assemblies such that said motor engages said one drive assembly to thereby drive each of said drive assemblies.

11. An apparatus according to Claim 8, wherein said plurality of pumps are positive displacement diaphragm pumps.

12. An apparatus according to Claim 1, wherein said manifold is capable of dispensing liquid from one of said plurality of tanks independent of other said tanks.

13. An apparatus according to Claim 1, wherein said apparatus is mounted on a vehicle.

14. An apparatus according to Claim 1, wherein said apparatus is mounted on a mobile platform.

15. A mobile decontamination module for mixing liquid decontaminants and dispensing a foam-based or liquid-based decontaminant, said module comprising:

a plurality of tanks capable of containing liquids;

a pump assembly in communication with said plurality of tanks 11, said pump assembly capable of drawing liquids from said plurality of tanks 11 in defined ratios; and

a manifold in communication with said pump assembly and said plurality of tanks 11, said manifold capable of mixing liquids from said plurality of tanks 11.

16. A mobile decontamination module according to Claim 15, further comprising a unitary drain and fill assembly in communication with said plurality of tanks and said pump assembly;

wherein said pump assembly operates to drain and fill said plurality of tanks 11.

17. A mobile decontamination module according to Claim 16, wherein said drain and fill assembly comprises:

a plurality of conduits in communication with said plurality of tanks;

a plurality of couplings in communication with said plurality of conduits, each of said plurality of couplings capable of receiving a hose; and

a plurality of valves in communication with said plurality of conduits;

wherein said drain and fill assembly drains and fills said plurality of tanks at each of said respective couplings.

18. A mobile decontamination module according to Claim 15, further comprising:

a drain assembly in communication with said plurality of tanks, said drain assembly capable of draining said tanks; and

a fill assembly in communication with said plurality of tanks, said fill assembly capable of filling said plurality of tanks.

19. A mobile decontamination module according to Claim 18, wherein said drain assembly comprises:

a plurality of conduits in communication with said plurality of tanks; and

a plurality of valves in communication with said plurality of conduits;

wherein said pump assembly operates to drain said plurality of tanks by pumping liquids from said tanks.

20. A mobile decontamination module according to Claim 18, wherein said fill assembly comprises:

a plurality of conduits in communication with said plurality of tanks;

a plurality of couplings in communication with said plurality of conduits, each of said plurality of couplings capable of receiving a hose;

a plurality of valves in communication with said plurality of conduits; and

a plurality of pumps in communication with said couplings, said conduits, and said tanks;

wherein said pumps operate to fill said plurality of tanks by pumping liquids from said couplings through said conduits and to said tanks;

wherein said drain assembly and said fill assembly drain and fill said tanks, respectively, at separate positions along said respective conduits.

21. An apparatus according to Claim 20, wherein said pump assembly and said fill assembly is capable of flushing liquid from one of said tanks through said pump assembly, said fill assembly, said conduits, and said manifold.

22. A mobile decontamination module according to Claim 15, wherein said pump assembly comprises:

a first pump in communication with said plurality of tanks, said first pump having a drive assembly; and

a second pump in communication with said plurality of tanks, said second pump having a drive assembly;

wherein said first and second pumps are capable of drawing liquids from said plurality of tanks in defined ratios through said first and second pumps to said manifold for mixing and dispensing.

23. A mobile decontamination module according to Claim 22, further comprising:

a coupling connecting said drive assembly of said first pump to said drive assembly of said second pump; and

a motor connected to said drive assembly of first pump, such that said motor engages said drive assembly of said first pump and drives said drive assembly of said first pump and said drive assembly of said second pump.



24. A mobile decontamination module according to Claim 22, further comprising:

a third pump in communication with said plurality of tanks, said third pump having a drive assembly;

wherein said first pump, said second pump, and said third pump each include a motor for driving each of said drive assemblies;

wherein said first pump, said second pump, and said third pump are capable of operating independent of one another.

25. A mobile decontamination module according to Claim 22, further comprising:

a third pump in communication with said plurality of tanks, said third pump having a drive assembly;

a first coupling connecting said drive assembly of said first pump to said drive assembly of said second pump; and

a second coupling connecting said drive assembly of said second pump to said drive assembly of said third pump;

a motor connected to said drive assembly of said first pump such that said motor engages said drive assembly of said first pump to thereby drive said drive assembly of said second pump and said drive assembly of said third pump.

26. A mobile decontamination module according to Claim 15, further comprising:

a platform for supporting said plurality of tanks, said pump assembly, and said manifold;

an enclosure secured to said platform, said enclosure arranged to surround at least a portion of said plurality of tanks;

a retractable boom rotatably mounted at one end to said enclosure, said boom in communication with said plurality of tanks, said pump assembly, and said manifold;

an enclosed cab secured to another end of said boom; and

a dispensing nozzle connected to said boom, said dispensing nozzle in communication with said plurality of tanks, said pump assembly, and said manifold;

wherein said platform supporting said enclosure is secured to a vehicle.

27. A mobile decontamination module according to Claim 26, wherein said dispensing nozzle is controllable from said enclosed cab.

28. A mobile decontamination module according to Claim 15, further comprising a heating system for heating liquids.

29. A mobile decontamination module according to Claim 15, further comprising:

a platform for supporting said plurality of tanks, said pump assembly, and said manifold;

a frame secured to said platform, said frame surrounding a portion of said plurality of tanks;

a retractable boom rotatably mounted at one end to said frame, said boom in communication with said plurality of tanks, said pump assembly, and said manifold, said boom being capable of dispensing decontaminants;

a basket secured to another end of said boom; and

a dispensing nozzle connected to said boom, said boom dispensing nozzle in communication with said plurality of tanks, said pump assembly, and said manifold.

30. A mobile decontamination module according to Claim 29, further comprising:

a plurality of dispensing hoses in communication with said manifold for dispensing decontaminants onto a desired area; and

a plurality of reel assemblies secured to said platform for collecting said plurality of dispensing hoses;

wherein said manifold is capable of delivering decontaminants to said boom dispensing nozzle and said plurality of dispensing hoses.

31. A mobile decontamination module according to Claim 29, wherein said boom dispensing nozzle is controllable from said basket and said platform.

32. A mobile decontamination module according to Claim 29, wherein said platform includes a plurality of rollers for facilitating movement of said platform.

33. A mobile decontamination module according to Claim 29, wherein said platform is mounted on a heavy equipment vehicle.